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(54) METHOD FOR FINDING AN INTERNET OR E-MAIL ADDRESS

VERFAHREN ZUM AUFFINDEN EINER INTERNET-ADRESSE ODER EINER E-MAIL ADRESSE
PROCEDE DE RECHERCHE D'UNE ADRESSE INTERNET OU D'UNE ADRESSE DE COURRIER
ELECTRONIQUE

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Description

[0001] The invention is based on a method for finding an Internet or E-mail address.

[0002] Internet or E-mail addresses are noted in the content of many Teletext pages regardless of whether they contain advertising or information. The addresses are currently transmitted within the visible area of a Teletext page so that the user must normally copy them and enter them into an Internet browser.

[0003] WO - A - 97 49 044 discloses a network access apparatus, allowing to access and navigate on a network, e.g. Internet, by using the apparatus in combination with a TV receiver/display. The navigation can be controlled in a traditional manner by using a mouse pointer, or in a specific manner by using a menu system, in which network addresses corresponding to pages of data or to e-mail addresses are selected by using a TV remote control. It is also foreseen that the TV can normally access Teletext data and it is specified that the keys on the remote control which are generally used for controlling the Teletext data are particularly well adapted for also controlling the network access apparatus.

[0004] The invention is based on the object of creating a simplified method for finding an Internet or E-mail address. This object is achieved by the features of the invention specified in the claims. Advantageous further developments of the invention are specified in the sub-claims.

[0005] The invention is set out in the claims.

[0006] The method according to the invention for finding an Internet or E-mail address which is reproduced in a teletext system, comprising visible areas and non-visible areas of the teletext system, a selection unit, a control unit and a link unit, is distinguished by the fact that the address in the visible area is selected by the selection unit, the control unit recognizes the selected address, the control unit accepts and/or modifies the address format and the address is selected via the link unit.

[0007] The method according to the invention provides the user with the advantage that he does not need to copy the Internet address which he sees in the teletext. This provides him with faster access.

[0008] Furthermore, the method can be characterized in that the control unit recognizes the address by means of obvious address information.

[0009] If the user is not able to select the address required by him with the aid of a cursor or another unit for highlighting the address, it is possible for the system itself to emphasize an Internet address. This means that the Internet address in the teletext is rendered visible for the user and he can let this address be selected by means of an acknowledgement key on a remote control unit. Obvious address information is, for example, Internet address strings such as "http://", "www." or subsequent strings such as, for example, ".com" or ".de" or strings which are preferably separated only by dots (without spaces). The control unit can use this informa-

tion to perform highlighting. For example, if the highlighting were to begin at "www" and end at ".com", the control unit could then translate the address thus found and use it for selection. Or if the highlighting begins at "www", the end can be determined in accordance with the extraction algorithm described below. The control unit can then translate the address thus found and use it for selection.

[0010] Furthermore, the method can be distinguished by the fact that the address is displayed in the visible area and the non-visible area contains address information which is used by the control unit for calling up the address.

[0011] If the translation of the Internet address is to be omitted, it is possible to store the address information in the non-visible area so that it could be found there. This means that there is a link between the visible teletext information and the non-visible Internet address which is then used by the control unit for selection.

[0012] It is also possible for a user to highlight the address by means of a highlighting unit and this address is to be transferred to the control unit.

[0013] The highlighting unit has the advantage that the user himself can highlight the part of the address relevant to him. For example, in the case of a long Internet address where, however, only the home page is of interest to the user, only the first part of the address needs to be highlighted which, as a rule, applies to the home page. In this manner, the user will not have to reach the home page via the detour of a subpage.

[0014] Furthermore, the method can be distinguished by the fact that the control unit contains a memory and/or that there is a link to a memory for storing addresses and/or retrieving addresses.

[0015] If the control unit contains a memory and/or accesses a memory, this would have the advantage that, as soon as the control unit recognizes an address in the teletext page, it can store it in the memory. The memory can also be used for checking whether the address selected by the control unit is correct. If, for example, an Internet address is not specified completely, it is possible to find it completely by means of a comparison with the addresses in a memory. This memory can be filled with many Internet addresses right from the start in order thus to provide the prerequisite that the correct Internet address will be found.

[0016] Using the control unit, the user can also perform a search algorithm so that he can find in this manner the address which he does not reliably know.

[0017] A circuit for finding an Internet or E-mail address which is reproduced in a teletext system comprising a selection unit, a control unit and a link unit is distinguished by the fact that the selection unit recognizes the address and the link unit sets up the link as soon as the control unit requests it to do so.

[0018] Furthermore, the circuit can contain a selection unit and a link unit in the control unit.

[0019] Furthermore, the circuit can be distinguished

by the fact that the control unit contains a memory and/or that there is a link to a memory.

[0020] In the text which follows, possibilities will again be explained by means of which Internet or E-mail addresses can be found.

[0021] The Internet or E-mail address(es) will be called addresses in the text which follows. The teletext page(s) is (are) called page(s) in the text which follows. They are designated by magazine numbers and a decimal page number. The corresponding line in the magazine is identified by a numerical value. e.g. x/5 is line 5 in a magazine x. teletext pages with a hexadecimal page number are called "ghost-page".

Page-related addresses

[0022] The page-related addresses must establish their reference to the page by at least one reference also being transmitted in one of the data packets belonging to this page.

Visible area: x/1 - x/23

[0023] The addresses which are transmitted in the visible area of the page do not have an identification which identify them as addresses. Such a page is then searched for address-specific identifiers. The names of the addresses are subject to the familiar restrictions of the character set according to the teletext specification (European Broadcasting Union: Interim Technical Document SPB 492). Thus, the characters @ ("at") and ~ (tilde) are not available in every national character set. Although it would be possible to generate them by x/26, they are, as a rule, replaced, namely @ by (at) and ~ by (*). The data themselves are sensitive to interference along the transmission path since they are only protected by one parity bit per 7 data bits.

Non-visible area: x/27 to x/31

[0024] As a rule, such additional data are protected by hamming coding. The character codes which contain colour attributes and others in the visible area can be used for completing the character set. The following forms are conceivable for optimizing the transmission:

- direct entry of the addresses, if necessary with row/column address for display within the visible area;
- reference to an address table which is transmitted in a separate "ghost page" (see under "sender-related addresses"). If a navigation medium (mouse, pointing device, tab stop) points to such an entry or reference, the complete address can be displayed in a superimposed window (free or docked), or can be visually emphasized if it is already displayed on the screen (as in the case of "page-related addresses").

x/27

[0025] The functions having designation codes 0-7 are used for transmitting links to other teletext pages.

5 The functions can also be used in this sense for looking for the corresponding address.

x/28

10 [0026] The functions having designation codes 0-4 are used. The functions having designation codes 5-15 can be freely specified for pointing to an address or to contain one.

x/30

[0027] The functions having designation codes 0-3 are used in magazine 8.

x/31

[0028] The packets are used for data services in magazines 1-3 and 8.

25 Sender-related addresses

[0029] Addresses which can be called up from each end must be transmitted and stored in page-independent tables. Such tables are usually transmitted with hexadecimal page numbers and are thus not directly selectable by the user.

x/28

35 [0030] The x/28 data to be defined can also contain references to "ghost pages". These can be handled like data pages of teletext presentation level 2.5 (described in ETS (European Telecommunication Standard) 300 706 issued by the European Telecommunications Standards Institute, F-06921 Sophia Antipolis).

Application

45 [0031] An application in the sense of ETS 300 708 is a non-teletext service which is transmitted in accordance with the transmission specification of teletext. Such a one can also contain addresses in a form which enables or necessitates the addresses to be administered independently of the teletext.

50 Separate Application

[0032] The access to the Internet can be defined as a separate application. This requires that the addresses are administered independently of the teletext.

Existing application

[0033] Within an electronic program guide (EPG), addressed can be named as pure text characters in the short or long information relating to the individual PIs (Program Information) (compare "visible area"; it differs from a teletext in the generation of the special characters: by x/26 in teletext and by ESC sequences in EPG).

Extraction algorithm

[0034] The transmitted addresses, as described above in the section "visible area", need a special extraction algorithm. This is capable of recognizing addresses, if necessary, over line breaks. In this connection, attention must be paid to various conditions.

[0035] If it is assumed that texts which are written over a number of lines are continued in the first possible column of the next line following, the column number in the continuation line is smaller than or equal to the starting column.

[0036] If it is assumed that texts are written in various colour combinations (foreground - background), it must be assumed that a start item is continued in the same colour combination. Thus, all areas with different colours and all mosaic graphics areas must be ignored (mosaic colour = text colour)

Address generation

[0037] Apart from the method of extracting complete Internet addresses from the received data, it would also be possible to generate Internet addresses by oneself from fractions. For this purpose, the user can select a part of the displayed text by mouse or pointing device.

[0038] If the selected text is free of characters which cannot occur in an Internet address such as, for example, a space, an attempt is made to find a valid Internet address in the following manner:

- a) by prefixing a string which determines the type of Internet address such as, e.g. "www.", "ftp." or "gopher."
- b) by appending a string which represents the so-called domain name such as, e.g. ".com", ".edu", ".gov" or of one of dynamic probability of use and/or stored for the user in accordance with geographic location such as, e.g. ".de", ".fr", ".it"
- c) by arbitrary combinations of the two above-mentioned measures
- d) by progressive shortening of the text by the last "/" in each case and the subsequent text.

[0039] In each case, the control unit transfers an Internet address thus generated to the Internet browser. If an address is recognized as valid, i.e. the browser is capable of reaching the Internet address without errors, the current address is entered into a list of valid Internet

addresses. In this time, the browser can, for example, display the content of the address first recognized as valid. If more than one Internet address is recognized as valid, the user is presented with a list containing these

5 addresses for selection. If only one valid address is found, the browser requests the content of this address. If no valid address is found for the selected text or if the text contains characters which cannot occur in an Internet address, this text is transferred to the browser with 10 the command to search the Internet for the text or for logically combined parts of the text by means of the search engine set as a standard. Thus, for example, Internet pages can be searched for which contain each or at least one of the words of a selected text.

15

Navigation

[0040] Navigation is made possible as follows:

[0041] 20 Addresses or address components which can be read explicitly in the text (see "address generation") appear visually emphasized (e.g. by underlining). If a navigation medium (e.g. mouse, visual pointing device or cursor, if necessary by tab stop) comes within the capture range of an address, the address is marked as logically combinable. This marking can be done by changing the cursor or by inserting the address (superimposition in a pop-up window or in a special status line). On confirmation by means of an OK button, the selected address is provided to a browser for selection or, respectively, for disposal.

[0042] 25 Similarly, it is possible to insert all information contained on the page (visible, as fragment or in the non-visible area) in a pop-up menu within which it is possible to navigate by means of cursor keys or mouse (pointing device). "Ok" - see above.

[0043] 30 In the text which follows, the invention will be explained with a number of illustrative embodiments, referring to the drawing, in which:

40 Figure 1 shows a block diagram of the method according to the invention,
Figure 2 shows a flow diagram of the method according to the invention.

45 [0044] 45 Figure 1 shows a block diagram of the method according to the invention. The tuner T receives the satellite, cable or terrestrial signal IN which is then forwarded to the data decoder DD and to the colour demodulator FD. The data then pass via a line or via a bus system to the memory MEM which contains data and programs.

50 Furthermore, the data pass to the processor PR. The processor forwards the data obtained to the picture tube B via the graphics card GK. The picture tube could be constructed as television set or as monitor. The processor PR also performs a data exchange with the modem MD and the modem is connected to an analog or digital telephone network TEL. The processor contains the selection unit and the control unit. The link unit is imple-

mented by the modem MD.

[0045] If a string which is an Internet address is then displayed on the picture tube B, the user can highlight this by means of the remote control unit FB. The remote control unit FB is connected to the other units by wires and/or wirelessly. The address thus formed is converted by the processor in such a form that the search can begin via the modem. That is to say, the program which is stored in a memory MEM is called up by the processor in the background, the data of the Internet address are conveyed to this program and the program activates a modem for the search. The program is preferably a program which is also used for normal Internet use. It is also possible for the search routine then running to be displayed to the user on the picture tube B. That is to say, the user sees that the address selected by him in the teletext is transferred to the program and the search mechanism is started. As soon as the address is found, the content of the page is displayed to the user. The displaying is preferably also performed in the form in which the programs for Internet or E-mails are constructed. If the user has seen enough information, he can navigate further in the Internet, simply change to teletext or also wholly to the television programme by means of the remote control unit. This makes it possible for the user to select in a simple manner an Internet or E-mail address discovered in a teletext and the result to be provided to him directly.

[0046] If the user does not highlight the address, the system independently looks for address information in the teletext page, highlights this address information and the user can let the address be searched for by means of the remote control unit. The address search and the selection is performed in the same manner as in the case of the highlighted address.

[0047] Figure 2 shows a flow diagram of the method according to the invention. If the user does not highlight the address by means of the remote control unit, the processor PR starts a program for finding addresses. Firstly, the program looks for significant address components. These would be, for example, "http://", "www.", ".com", ".de" and others. As soon as an address meeting the start or end condition is found, it is stored. After that, a check is made whether the address ends before column 38 or an invalid character is detected. If this is the case, the search is ended and if not, the search is continued in the subroutine "continue searching". The "continue searching" subroutine compares whether the colour combination is the same as in the case of the start address. If this is the case, the contents of the column are allocated to the address and if not, the next colour combination is looked for and a check is made whether the column number is greater than in the case of the start address. If the column number is greater than the start address, the search is ended since the address will be continued in this column, at the latest. If the column number is not greater, the subroutine is run again. In this manner, the address is found since the address has the

same colour continuously, as a rule. That is to say, if the address begins in one column, the colour is used for checking whether the address ends in the column or whether it is continued in the next higher or lower column. This depends on the following criteria: it is continued in the next lower column (i.e. higher column number) if the start characters of the address are found and it is continued in the next higher column (i.e. lower column number) if the end-of-address condition is found.

[0048] If both address conditions are found, i.e. start and end condition, the address can be determined by taking the start condition, end condition and the information in between and/or it is possible to recognize the entire address by means of the colour information.

Claims

- 20 1. Method for calling up an Internet or E-mail address, comprising the steps of:
 - 25 accessing the Internet or E-mail address by an Internet browser;
 - receiving teletext data, and,
 - displaying the received teletext data;
 - further comprising the following **characterizing steps**:
 - 30 selecting with a processor Internet or E-mail address information from the displayed teletext data; and,
 - supplying with a link unit an Internet or E-mail address corresponding to the selected Internet or E-mail address information to the Internet browser.
2. Method according to Claim 1, further comprising supplying the Internet or E-mail address from teletext data which have been transmitted in teletext pages not selectable by the user.
3. Method according to Claim 1 or 2, further comprising analysing the displayed teletext data for Internet or E-mail address information and highlighting detected Internet or E-mail address information.
4. Method according to Claim 3, further comprising displaying all Internet or E-mail address information contained on a teletext page in a pop-up menu.
5. Method according to any of the preceding Claims, further comprising generating the Internet or E-mail address from fractions selected in the displayed teletext data.
6. Method according to Claim 5, further comprising prefixing the selected fraction with a string deter-

mining the type of Internet or E-mail address such as e.g. "www." and/or appending to the selected fraction a string representing the domain name such as e.g. ".com".

7. Method according to Claim 5 or 6, further comprising for only one valid address found, requesting the content of this address by the browser.

8. Method according to any of Claims 5 to 7, further comprising for more than one valid address found, displaying a list containing these addresses for selection.

9. Method according to any of Claims 5 to 8, further comprising for no valid address found, transferring the selected fraction to the browser and searching the Internet for the text or for logically combined parts of the text by means of a search engine.

10. Apparatus for calling up an Internet or E-mail address, wherein the Internet or E-mail address is supplied to an Internet browser, comprising means (T) for receiving teletext data comprised in a satellite, cable or terrestrial signal (IN), means (B) for displaying the received teletext data, characterised by means (FB) for selecting Internet or E-mail address information from the teletext data, and means (MD) for supplying an Internet or E-mail address corresponding to the selected Internet or E-mail address information to the Internet browser.

Patentansprüche

1. Verfahren zum Aufrufen einer Internet- und/oder Emailadresse, die folgenden Schritte umfassend:

Zugreifen auf die Internet- oder Email-Adresse durch einen Internetbrowser; Empfangen von Teletextdaten, und Darstellen der empfangenen Teletextdaten; weiterhin die folgenden kennzeichnenden Schritte umfassend:

Auswahl einer Internet- oder Email-Address-Information aus den dargestellten Teletextdaten mit einem Prozessor; und Bereitstellen einer der ausgewählten Internet- oder Email-Adresse entsprechenden Internet- oder Email-Adresse mit einer Verbindungseinheit für den Internetbrowser.

2. Verfahren nach Anspruch 1, das weiterhin das Bereitstellen der Internet- oder Email-Adresse aus Teletextdaten umfasst, die in Teletextseiten übertragen worden sind, die vom Benutzer nicht auswählbar sind.

3. Verfahren nach Anspruch 1 oder 2, das weiterhin das Analysieren der dargestellten Teletextdaten für Internet oder Email-Adresse-Informationen und das Markieren detekterter Internet- oder Email-Adresse-Informationen umfasst.

4. Verfahren nach Anspruch 3, das weiterhin die Darstellung in einem Pop-Up-Menü aller Internet- oder Email-Adresse-Informationen, die auf einer Teletextseite enthalten sind, umfasst.

5. Verfahren nach einem der vorhergehenden Ansprüche, das weiterhin die Erzeugung der Internet- oder Email-Adresse aus Bruchstücken, die aus den dargestellten Teletextdaten ausgewählt werden, umfasst.

6. Verfahren nach Anspruch 5, das weiterhin das Voranstellen einer Zeichenkette, die die Art der Internet-Adresse bestimmt, wie z. B. "www.", vor das ausgewählte Bruchstück umfasst und/oder das Hinteranstellen einer Zeichenkette, die den Domain-Namen darstellt, wie z. B. ".com", an ein Bruchstück.

7. Verfahren nach Anspruch 5 oder 6, das weiterhin umfasst, für nur eine gefundene gültige Adresse den Inhalt dieser Adresse durch den Browser abzufragen.

8. Verfahren nach einem der Ansprüche 5 bis 7, das weiterhin umfasst, für mehr als eine gefundene gültige Adresse eine Liste darzustellen, die diese Adressen zur Auswahl enthält.

9. Verfahren nach einem der Ansprüche 5 bis 8, das weiterhin umfasst, für keine gefundene gültige Adresse das ausgewählte Bruchstück zum Browser zu übertragen und das Internet nach dem Text oder nach logisch kombinierten Teilen des Textes mit Hilfe einer Suchmaschine zu durchsuchen.

10. Vorrichtung zum Aufrufen einer Internet- und/oder Email-Adresse, wobei die Internet- oder Email-Adresse einem Internetbrowser bereitgestellt wird, umfassend: Mittel (T) zum Empfangen von Teletextdaten, die in einem Satelliten-, Kabel- oder terrestrischen Signal (IN) enthalten sind, Mittel (B) zum Darstellen der empfangenen Teletextdaten, gekennzeichnet durch Mittel (FB) zum Auswählen von Internet- oder Email-Adressen aus den Teletextdaten, und Mittel (MD) zum Bereitstellen einer der ausgewählten Internet- oder Email-Adresse entsprechenden Internet- oder Email-Adresse für den Internetbrowser.

Revendications

1. Procédé pour appeler une adresse Internet ou une adresse de courrier électronique comportant les étapes suivantes :

- accès à l'adresse Internet ou à l'adresse de courrier électronique via un navigateur Internet,
- réception de données de télétexte et
- affichage des données de télétexte reçues ;

comportant également les étapes caractéristiques suivantes :

- sélection à l'aide d'un processeur d'informations d'adresse Internet ou d'adresse de courrier électronique dans les données de télétexte affichées,
- transmission à l'aide d'une unité de liaison d'une adresse Internet ou d'une adresse de courrier électronique correspondant aux informations d'adresse Internet ou d'adresse de courrier électronique sélectionnées au navigateur Internet.

2. Procédé selon la revendication 1 comportant en outre la mise à disposition de l'adresse Internet ou de l'adresse de courrier électronique à partir de données de télétexte transmises dans des pages non sélectionnables par l'utilisateur.

3. Procédé selon la revendication 1 ou 2 comportant en outre l'analyse de données de télétexte affichées pour les informations d'adresse Internet ou d'adresse de courrier électronique et la mise en surbrillance des informations d'adresse Internet ou d'adresse de courrier électronique détectées.

4. Procédé selon la revendication 3 comportant en outre l'affichage de toutes les informations d'adresse Internet ou d'adresse de courrier électronique contenues sur une page de télétexte dans un menu contextuel.

5. Procédé selon l'une des revendications précédentes comportant en outre la génération de l'adresse Internet ou de l'adresse de courrier électronique à partir de fractions sélectionnées dans les données de télétexte affichées.

6. Procédé selon la revendication 5 comportant en outre l'ajout en préfixe à la fraction sélectionnée d'une chaîne déterminant le type d'adresse Internet ou d'adresse de courrier électronique telle que "www." et/ou l'ajout en suffixe à la fraction sélectionnée d'une chaîne représentant le nom de domaine telle que ".com".

7. Procédé selon la revendication 5 ou 6 comportant en outre pour une seule adresse valide identifiée la demande du contenu de cette adresse par le navigateur.

8. Procédé selon l'une des revendications 5 à 7 comportant en outre pour plusieurs adresses valides identifiées l'affichage d'une liste contenant ces adresses pour sélection.

9. Procédé selon l'une des revendications 5 à 8 comportant en outre en l'absence d'adresse valide identifiée le transfert de la fraction sélectionnée vers le navigateur et la recherche sur Internet du texte ou de parties logiquement combinées du texte à l'aide d'un moteur de recherche.

10. Appareil pour appeler une adresse Internet ou une adresse de courrier électronique dans lequel l'adresse Internet ou l'adresse de courrier électronique est fournie à un navigateur Internet comportant un dispositif (T) de réception de données de télétexte comprise dans un signal par satellite, par câble ou terrestre (IN), un dispositif (B) d'affichage des données de télétexte reçus, caractérisé par un dispositif (FB) de sélection d'informations d'adresse Internet ou d'adresse de courrier électronique dans les données de télétexte et un dispositif (MD) de transmission d'une adresse Internet ou d'une adresse de courrier électronique correspondant aux informations d'adresse Internet ou d'adresse de courrier électronique sélectionnées au navigateur Internet.

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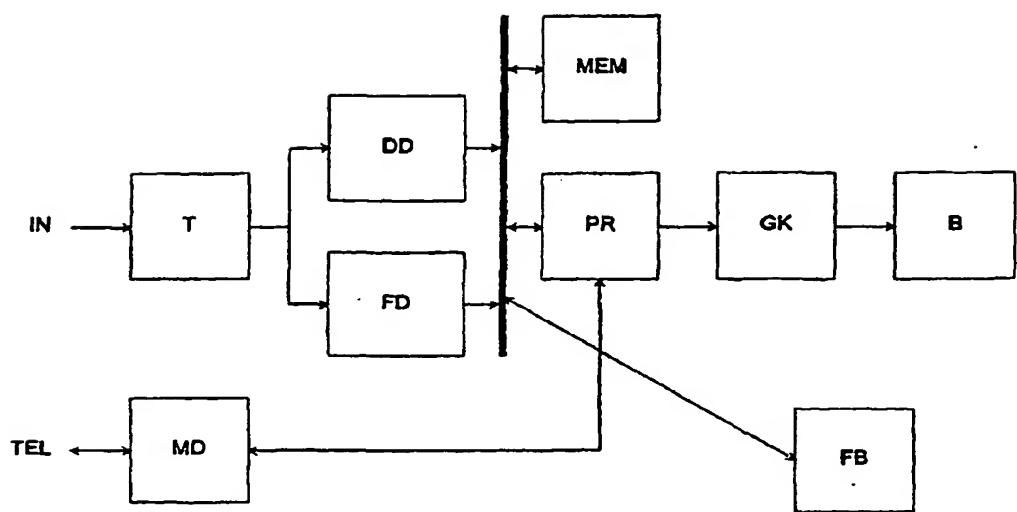
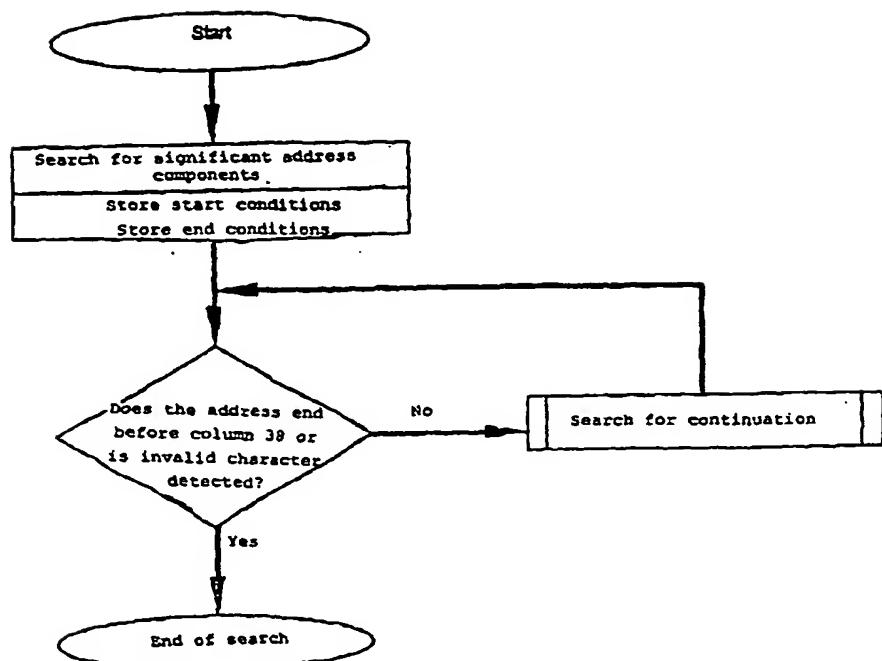


Fig. 1



Subroutine "Search for continuation"

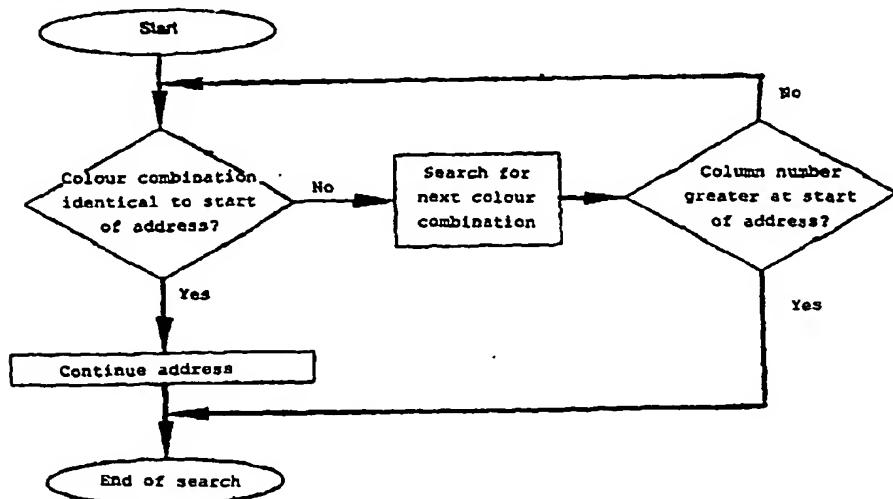


Fig. 2